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COMPARATIVE STUDY OF MURRAYA KOENEGII LEAVES AND GYMNEMA SYLVESTRE LEAVES ON TYPE -II DIABETES MELLITUS PATIENTS

Dr .(Mrs) Anpuchelvy Sritharan* Dr .(Mrs) M.C.Srikhanthan* Dr.G. Sritharan**
**Senior lecturer G –II, Unit of Sidda Medicine, University of Jaffna, SriLanka.*
***Siddha Medical Officer, Herbal Health Care Centre,Kokuvil , Jaffna, SriLanka.*

INTRODUCTION

Diabetes mellitus is a chronic disease affecting millions of people all over the world. At present, the goal is to control blood sugar, minimize long-term complications and strive to maintain the general good health of the affected individual. Ancient Siddha Medicine mentions various plants and mineral preparations in the treatment of diabetes mellitus. They are different combination of these plants and minerals which can be given orally and for prolonged periods without any side – effects.

The term diabetes mellitus was recognized as Madhumekam in primeval times. Our ancient Hindu Physicians had mastered the science of managing this disorder with effective balance of 'Aushada' some herbs or plant food sources. Ahar (Pathyam) in modern terms therapeutic diets and Vihar (exercise). That indigenous food alone may not be as effective as insulin in lowering the blood sugar but the combination therapy seems to equate with the modern methods of drug, diet and exercise. However, down the line, in the quest of advancement the indigenous food therapy is extinguishing.

A number of widely used herbs have appreciable amounts of vitamins, minerals and trace elements, and can be used almost as nutritional supplements. Many others have excellent digestive qualities, helping the body to cope with oily, fatty or gas- producing foods. For these reasons, as well as the extra pleasure given by their flavour, one of the earliest and best uses of herbs to maintain health is in one's food. In ancient cultures, diet and medicine were inextricably linked "let your food be your medicine, and your medicine be your food" This generation indicates the improve the health by diet.

Murraya koenegii (English name;- Curry leaf, Tamil Name: Karuveppilai) purple –black fruited tree most famous for its aromatic leaves that provide curry spice. While the curry tree is commonly thought of as a tropical tree, it does survive in brief frosts and grows fairly well in subtropical climates. The leaves are used as an important food flavoring in SriLanka. When cooking, the leaves are generally used fresh off of the tree. The aromatic leaves are all to some extent carminative, that is they act almost immediately in the alimentary tract, and to release any trapped gas.

The leaves of *Murraya koenegii* are also used as a herb in Siddha medicine. Their properties include much value anti-diabetic[1], anti- oxidant [2] etc.

JUSTIFICATION FOR THE STUDY- In fact there was no traditional Siddha medical clinical trial in the Jaffna. Scientific importance of this study of some herbs enhance action, while others avoid or minimize possible side-effects. Plants are complex mixtures of various compounds. One ingredient may be principally responsible for pharmacological action, where other secondary components may be just as important activators or modifiers of this action . The interaction of a variety of compounds makes remedies safer and effective. Thus, the formulation derived comprises multiple constituents, to produce desired therapeutic effect by multiple pharmacological actions.

In Siddha literature many such compounds have emerged and have shown their clinical efficacy. The nature of these drugs are primarily bitter in taste and are widely used by people in non-pharmacological doses as food items.

The Siddha system of medicine predominantly uses the plant –based raw materials to sooth and cure. Today despite stories of life saving success, fears about the side effects of modern drugs and the failure to find effective treatments for many condition have spurred a revival in herbalism. According to WHO about 25% prescribed human medicine are derived from plants and over 80 % of the population in the developing countries still depend on the traditional system of medicine.

Plants have played a significant role in maintaining human health and improving the quality of human life for thousands of years, and have served humans well as valuable components of herbal medicine. The World Health

Organization estimated that 80% of the earth's inhabitants rely on traditional medicine for their primary health care needs and most of this therapy involves the use of plant extracts or their active compounds.

BENEFIT OF THE STUDY: - It will introduce the efficacy of the trial drug. This in turn will help to prepare large scale medicine in siddha pharmacy, and it will lead to the promotion of the use of medicinal plant under trial by public. Moreover it is cheap and easily available in almost all the areas.

Nutritional Values of the *Murraya koenegii* (Curry leaf) 100g

1.	Protein	- 6.1 g
2.	Fat	- 1g
3.	Carbohydrate	- 18.7g
4.	Calcium	-830mg
5.	Phosphorous	-57mg
6.	Iron	-7mg
7.	β carotein	-7560mcg
8.	B_1	-80mcg
9.	B_2	-120mcg
10.	B_3	-2.3mg
11.	Vita. C	-4mg
12.	Fibre	- 6.4g

Source- Nutritive Value of Food Items (2006),Jaffna[3].

Key words:- Diabetes mellitus, *Murraya koenegii*., Siddha , herbal, SriLanka.
Objective;- Clinical Evaluation of the efficacy of trial drug of *Murraya koenegii & Gymnema sylvestre* in Diabetes mellitus.

MATERIAL AND METHODS
Type of study **:** Phase I Clinical Evaluation.
Sample Population :- 20 Non –Insulin diabetic mellitus patients are selected for the study.
Study Area **:-** Jaffna, SriLanka

INCLUSION CRITERIA
Patients having classical symptoms of diabetes mellitus with blood sugar elevation.
Increased post prandial blood sugar >180mg / dl
Over 40 years of age.

EXCLUSION CRITERIA
Patients of IDDM or Juvenile onset of Diabetes mellitus.
Diabetes mellitus with severe complications
Pregnant and lactating mothers.

EXPERIMENTAL PROCEDURE
20 patients were selected for the study, in which 10 patients were selected randomly as control group who were treated with Gymnema sylvestre leaves kalkam . The rest of the 10 patients were treated with Murraya *koenegii* leves kalkam. Ten patients of both sexes, from the age group of 40- 60 years were selected for the study. The patients were registered in the OPD at the dispensary after clinical examination The clinical features were observed and compared with textual symptoms as subjective and those who were willing to give informed consent was also enrolled in the study.

Those who are interested to join in the trial were given patient questionnaire. The study was conducted with the consent of the patient in Jaffna, SriLanka. The patients were informed about the study drug, its effects, duration of the trial, and overall plan of the study. . Detailed clinical examination was done before and after treatment to arrive at conclusions regarding the effect of Murraya *koenegii* kalkam.

Group A:- *Murraya koenegii* leaves kalkam 3g with water twice a day for 21 days was given to 10 patients..
Group B :- Gymnema sylvestre leaves kalkam 3g with water twice a day for 21 days was given to 10 patients.

Patients were randomly allocated to either group A or B. There were equal number of patients in each of the group Patients in both groups were instructed to take a similar diet pattern.

ADVERSE EVENTS

All adverse events reported or observed by patients will be recorded with information about its severity, date of onset, duration and necessary action taken regarding the administration of study drug.
The patients who experienced serious discomfort during the study or sustained serious clinical events requiring specific treatment or patients have withdrawn from the study. Efforts were taken to ascertain the reason for dropouts.

Before the administration of the drug under trial initial blood sugar level was taken. Patients were advised to take the drug at a dose of 3g. Blood samples were collected at 2 hours after the drug administration and the blood glucose was estimated. Clinical examination, investigation were done in order to record the occurrence of any adverse event/s (either reported or observed)
In case of mild tolerable unwanted complications with the drug under trial was promptly managed by researcher.

RESULTS

Table- 1: Hypoglycemic Effect of 3 Weeks Treatment

Groups	**Initial PPBS (mg / dl)**	**1st week PPBS (mg / dl)**	**2nd week PPBS (mg / dl)**	**3rd week PPBS (mg / dl)**
Group-A (Gymnema sylvestre)	244 (+ /- 47,09)	224 (+/- 47.49)	158(+/- 32.46)	120 (+/- 40.59)
Group-B (Murraya koenegii)	260(+ /- 60.17)	211 (+ /- 60.32)	170 (+ /- 47.56)	145 (+ /- 30.01)

DISCUSSION

The present study aimed to look for an effective, safe and alternative treatment for Diabetic mellitus. The results of this study confirmed that Diabetic mellitus was usually self- limiting disease with its symptoms improved in the 3rd week of presentation. However, the herbs used in this study showed to improve symptoms. This formulary was well tolerated with no adverse effect being reported. The present study showed Hypoglycemic activity of herbs such as Gymnema sylvestre, Murraya koenegii was observed.

CONCLUSION

The present study shows that the Gymnema sylvestre, Murraya koenegii has the hypoglycemic effect and best uses of this herbs diet to maintain health is in one's food.

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